Multifunction Analyzer

Tutorial for DMM

Sohwa & Sophia Technologies

Version 1.00

Contents

01. Introduction

This document describes the flow of how to operate the **Digital Multi Meter function** [the abbreviated title is **DMM**] that is implemented in the **Multifunction Analyzer** [the abbreviated title is **MFA**].

If you have any words you don't know, such as name, please refer to the **Hardware Users Manual** for the **MFA** and the **Help** for the **MFA application**.

Functions
Oscilloscope
Logic analyzer
Pattern generator
Function generator
Digital multi meter
Simple DC supply
JTAG checker

02. Equipments

Please prepare the following equipments.

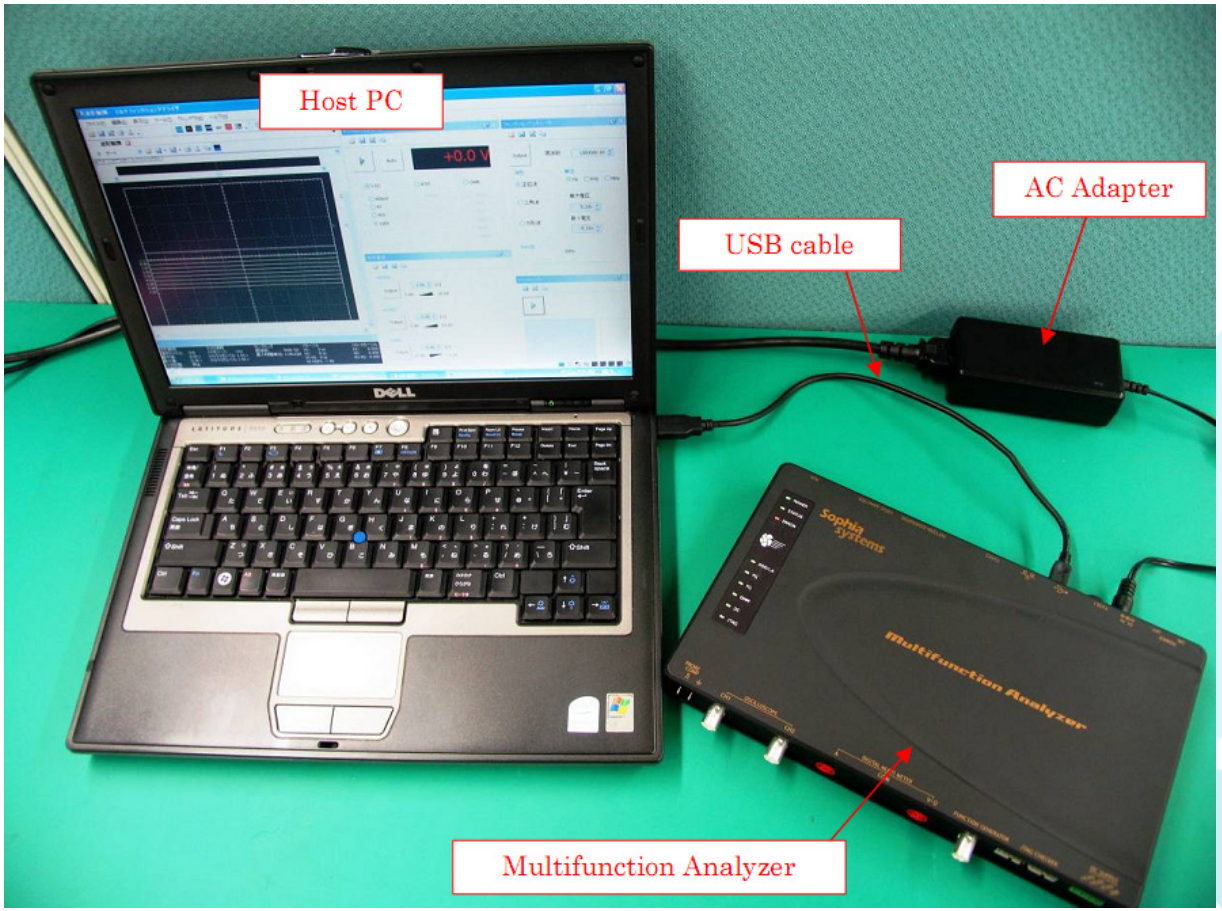
- **MFA** [Qty:1]
- **USB cable of type mini B** [Qty:1] [Sold separately]
- **AC adapter and AC cable** [Qty:1]
- **DMM cable** [**Black**] [Qty:1]
  [Sold separately: CS2893 [4310-2D-IEC-100-0 Maker: Tokiwa & Co., Inc.]]
- **DMM cable** [**Red**] [Qty:1]
  [Sold separately: CS2897 [4310-2D-IEC-100-2 Maker: Tokiwa & Co., Inc.]]
- **FG cable** [Qty:1] [**FG: Function Generator**]
  [Sold separately: CS2892 [TLBNWA-1.5D2V-PPRG-1 Maker: Misumi]]
- **PC** [with the **MFA application**] [Qty:1]

  *Please refer to the **Installation Manual** for how to install of the **MFA application**.
- **Resister** [1kΩ, >= 0.1W] [Qty:1]

03. Starting Up

Connect the **Host PC** and the **MFA's equipments**.

Then, turn on power to the **MFA** and start the **MFA application**.



* For details about how to connect the **Host PC**, the **MFA's equipments** and about how to start the **MFA**, please refer to the **Hardware Users Manual**.

* For details about how to start the **MFA application**, please refer to the **Help**.

04. Connections [for the Resistor/Voltage Measurement]

In this section, describes connections for performing the **resistor/voltage measurement**.

1. Connect the **DMM cable [black]** to the **DMM COM connector**.
2. Connect the **DMM cable [red]** to the **DMM V/Ω connector**.

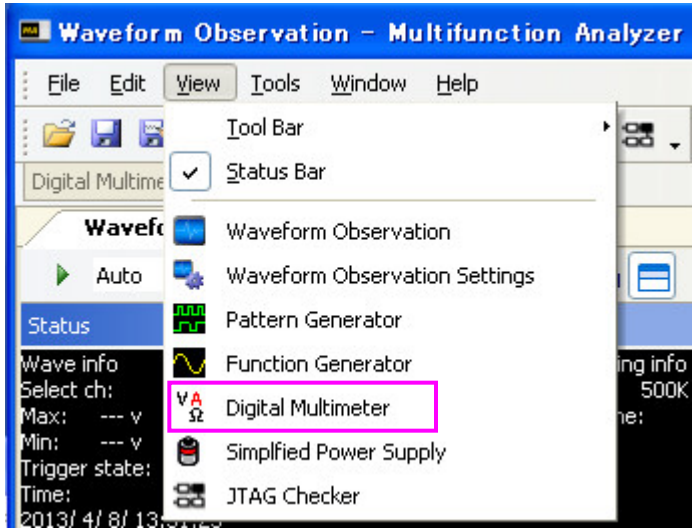
3. Connect the **FG cable** to the **FG connector**.

05. Starting the Setup Dialog

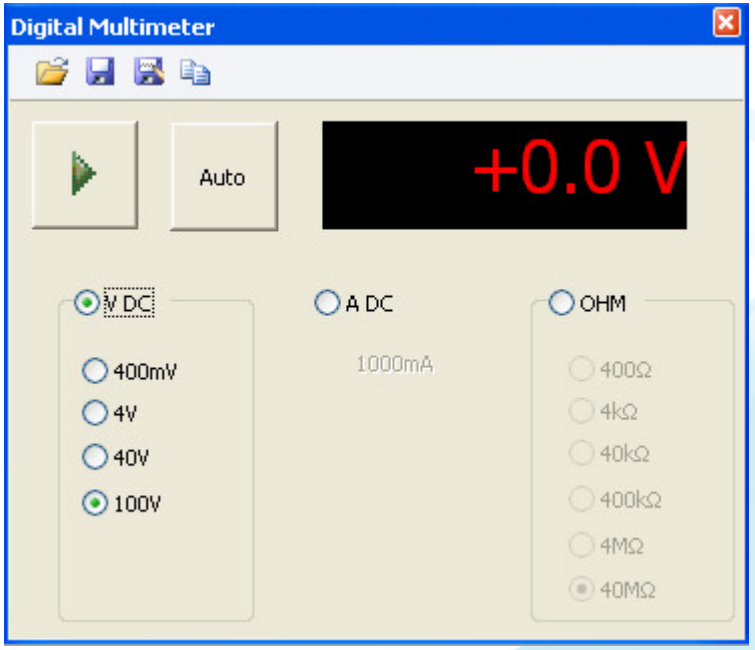
In this section, describes how to start the **DMM Setup Dialog** of the **MFA application.**

Click **Digital Multimeter**.

Click Digital Multimeter



DMM Setup Dialog

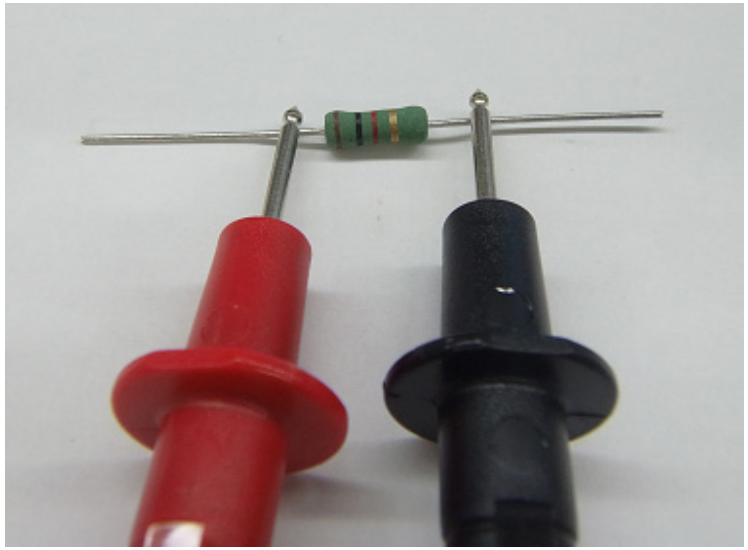


06. Measuring the Resistor

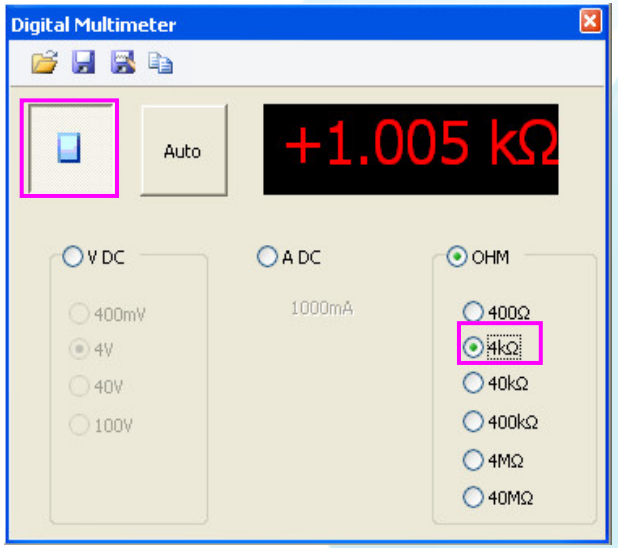
In this section, describes how to measure the **Resister [1kΩ].**

1. Connect the **DMM cable probe** to **both ends of the Resistor**.
2. Select **OHM 4kΩ range**, then click the **measurement start button**.
3. Check that **approximately 1kΩ** is displayed.
4. Click the **measurement stop button** [same as the **measurement start button**].

Connect the DMM cable probe to both ends of the Resistor



Select range --> Measurement start --> Check measurement value

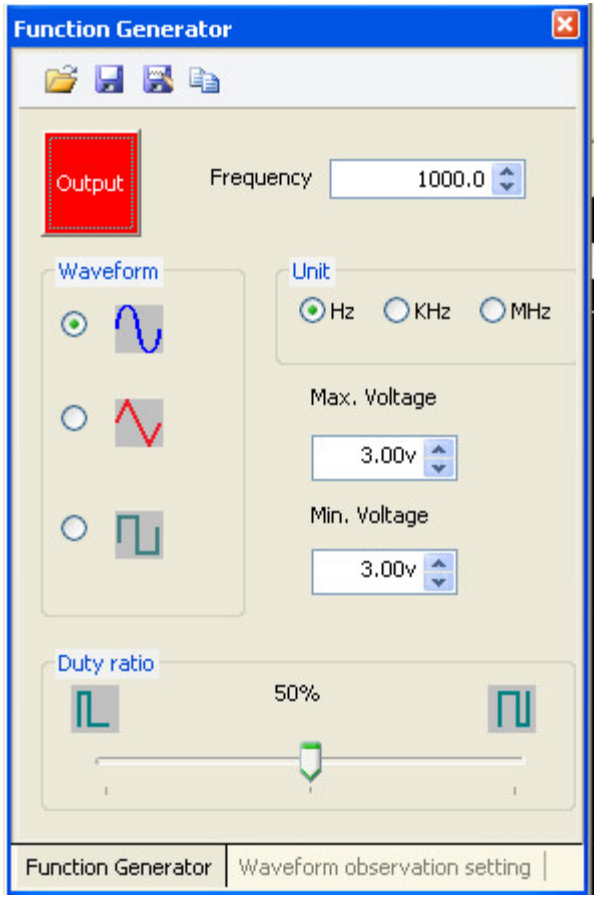


*There is a measurement error in the measurement value and measurement object.
Please understand that it does not mean that the measured value as shown above always.

07. Starting the Power [Measurement Object]

In this section, describes how to start the **power for voltage/current measurement** by using the **FG**.

1. Set **Max Voltage 3.00v** and **Min Voltage 3.00v**.
2. Click **Output**.



*If the operation method of FG don't know, please refer to the **tutorial for FG**.

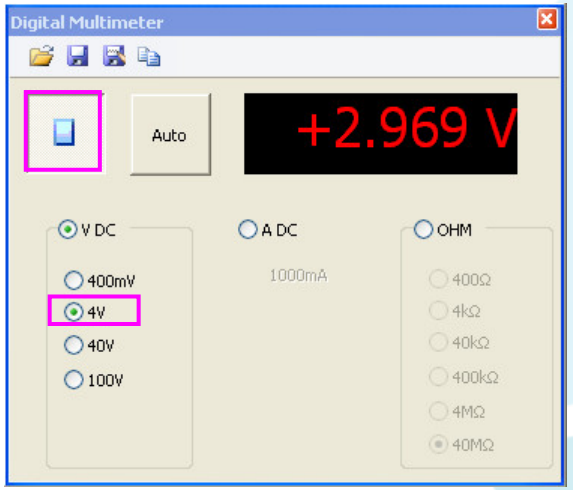
08. Measuring the Voltage

In this section, describes how to measure the **Voltage [3.0V]**.

1. Connect the **DMM cable probe** and the **FG cable clip**.
2. Select **VDC 4V range**, then click the **measurement start button**.
3. Check that **approximately 3V** is displayed.
4. Click the **measurement stop button** [same as the **measurement start button**].

Connect the DMM cable probe and the FG cable clip

Select range --> Measurement start --> Check the measurement value

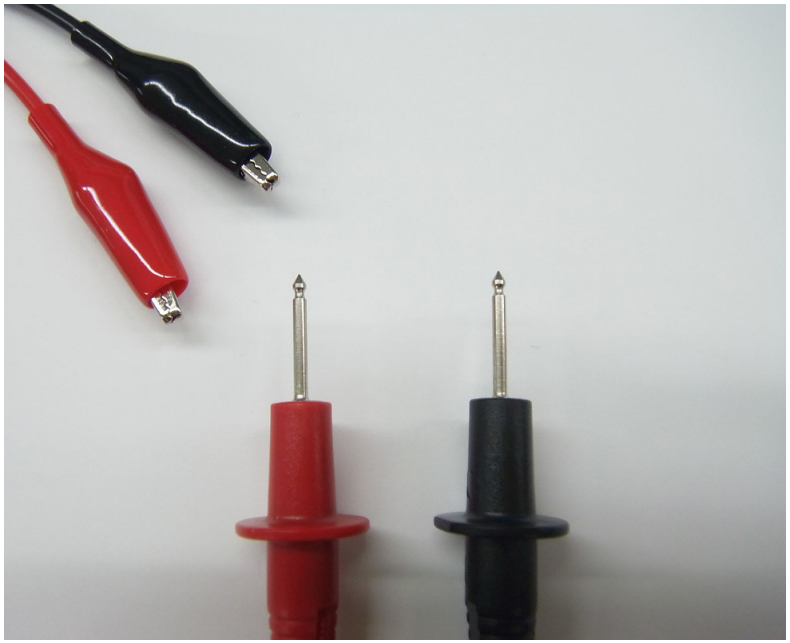


*There is a measurement error in the measurement value and measurement object.
Please understand that it does not mean that the measured value as shown above always.

09. Connections [for the Current Measurement]

In this section, describes connections for performing the **current measurement**.

1. Remove connection of the **DMM cable** and the **FG cable**.
2. Connect the **DMM cable [black]** to the **DMM COM connector**.
3. Connect the **DMM cable [red]** to the **DMM A connector**.

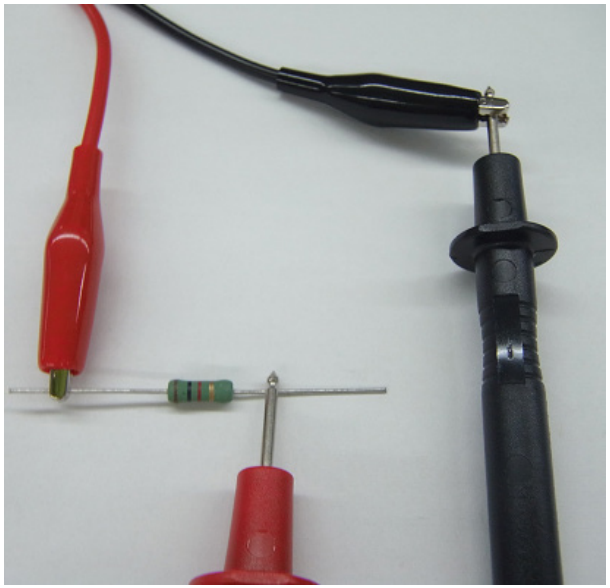


10. Measuring the Current

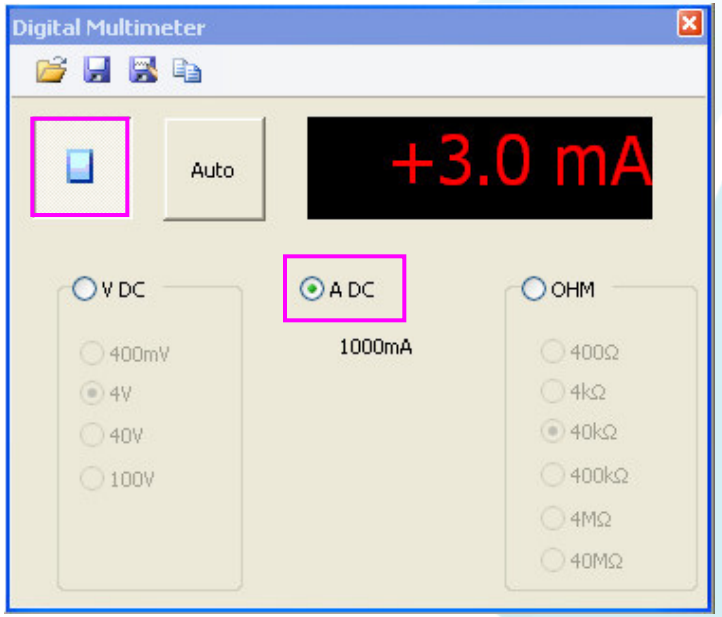
In this section, describes how to measure the **Current [3.0V/1kΩ=3.0mA]**.

1. Connect the **DMM cable probe** , the **Resister** and the **FG cable**.
2. Select ADC range, then click the **measurement start button**.
3. Check that **approximately 3.0mA** is displayed.
4. Click the **measurement stop button** [same as the **measurement start button**].

Connect the DMM cable probe , the Resister and the FG cable



Select range --> Measurement start --> Check the measurement value

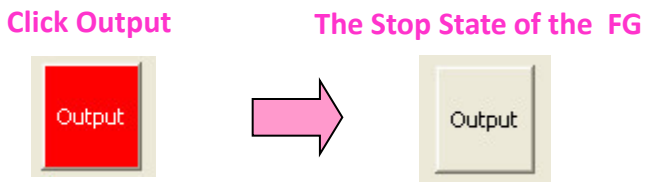


*There is a measurement error in the measurement value and measurement object.
Please understand that it does not mean that the measured value as shown above always.

11. Stopping the Power [Measurement Object]

Finally, stop the FG.

Click **Output**.



This tutorial is completed.